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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,376	07/08/2002	Jeffrey S. Brown	BUR920010176	4012

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EXAMINER

KANG, DONGHEE

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,376

Applicant(s)

BROWN ET AL.

Examiner

Donghee Kang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 13-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1-15) in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Information Disclosure Statement

2. Acknowledgment is made of receipt of applicant's Information Disclosure Statement (PTO-1449) filed July 08, 2002.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the phrase "*a subset of integrated circuits thereon having a minimum normal design width which is smaller than the width of other integrated circuit elements on said substrate*" in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 1 & 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Re claim 1: The phrase "a subset of integrated circuits thereon having a minimum normal design width which is smaller than the width of other integrated circuit elements on said substrate" is not supported by disclosure. The disclosure describes only "subset of integrated circuit elements thereon which have a minimum width W1" (see paragraph 0038 on page 7).

Re claim 8: The phrase "the sub-minimum width is approximately 0.5 micron" is not supported by the disclosure.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 & 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1: The phrase "a conductive line formed on said substrate and having two end portions and a center portion of said minimum normal design width" is unclear because a subset of integrated circuit elements has a minimum normal design width

rather than two end portion and a center portion. Examiner suggests two end portions and a center portion having minimum normal design width.

Re claim 1: The term "minimum normal design width" is relative and render the claims indefinite. The term "minimum normal design width" is not defined by the claims and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Re claim 8: The phrase "the minimum normal design width approximately 0.13 microns, and the sub-minimum width is approximately 0.5 microns" is misdescriptive because the sub-minimum width is less than the minimum normal design width (see claim 1).

Claims 2-3 and 7-12 are rejected since each includes the limitation of the independent claim 1.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3 & 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delpech et al. (US 6,271,574).

Re claim 1, Delpech et al. teach in Figs. 8-9 a fuse element (Fig.8) formed on a semiconductor substrate (41, Fig.9), the substrate having a subset of integrated circuit

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elements thereon and a conductive line, which receives first and second power supply voltage, formed on said substrate and having two end portions and a center portion of minimum width (W_1) and a link portion within said center portion and spaced from said end portions, which has a sub-minimum width (W_{\min}) less than said minimum width, wherein an application of said first and second power supply voltages across said end portions causes an electrical property of said fuse element to undergo a detectable change. Delpech et al. do not expressly teach the subset of integrated circuit elements having a minimum width. However, it is convention in the art to reduce the width of the elements to increase the density of elements hence saving manufacturing cost and time. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to minimize the width of integrated element in Delpech's device in order to increase the density of device.

Re claim 2, Delpech et al. teach the conductive line including a silicide thereon (Col.6, lines 6-15).

Re claim 3, Delpech et al. teach the changed electrical property is resistance of the conductive line.

Re claim 7, Delpech et al. teach the spacing between the center portion and the end portion is sufficient to prevent the end portions from serving as heat sink to increase the amount of joule heating required to change the electrical property.

Re claim 9, Delpech et al. teach the link portion is approximately at the center of the center portion.

Re claims 10-12, Delpech et al. teach the conductive eline (polysilicon E-fuse) including a narrow sub minimum width polysilicon line to provide increased self heating during programming when a current is passed through the E-fuse.

wherein the polysilicon E-fuse uses a shorted/open line to distinguish a programmed/unprogrammed E-fuse and

Wherein the polysilicon E-fuse uses a change in resistance to distinguish a programmed/unprogrammed E-fuse. Delpech et al. do not expressly teach the narrow sub-minimum width polysilicon line

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 703-305-9147. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Donghee Kang
Examiner
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